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UNH, State Data Show Healthier White Pines From Improved Air Quality

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DURHAM, N.H. — More than 20 years of data from the University of New Hampshire's K-12 inquiry-based Forest Watch research program show the state's population of white pine trees have regained health in step with lower smog levels attained through tougher federal and state air quality standards.

The Forest Watch research documenting improved tree health since 1991 was borne out by data recently compiled by the state's Department of Environmental Services-Air Resources Division that show a steady decline in ground-level ozone (smog) since the late 1980s. The collective results were reported at the annual Forest Watch teacher's workshop held recently on the university's Durham campus.

State records indicate that 1991 was the peak year for ozone and that levels have been declining ever since. This is due in part to passage of the federal Clean Air Act Amendments of 1990, which among other things increased restrictions on ozone-producing pollution emissions, as well as related state and regional efforts to reduce pollutants tied to the occurrence of smog.

Notes UNH professor Barrett Rock, founding director of Forest Watch, "Coincidentally it turns out that Forest Watch began in 1991, the year of our highest ozone levels, and with this newly compiled state data we're now seeing corroborating evidence for what our student-based Forest Watch data have shown over a period of 20 plus years—that the improved health of white pines is directly tied to lower ozone levels."

Forest Watch is a unique way of conducting science with the help of primary and secondary school students across New England who collect and process data relating to air pollution damage in forest stands near their schools. Since its inception, more than 350 schools have participated in the program, with some 50 to 100 actively engaged in monitoring their local white pines—a bio-indicator species for ground-level ozone—in any given year.

The program's most current findings, in tandem with the state ozone data, provide clear evidence that federal, regional, and statewide policy changes have had a dramatic impact on lowering air pollution levels and concurrently improving the health of a vital tree species for the Granite State.

"The lesson here," says Rock, "is that stronger environmental policy changes have had a dramatic, positive impact on air quality and white pine health. And, from my perspective, this 'good news' story needs to be told because it comes at a time when there are growing efforts to trim back on EPA regulations, which are considered to be too restrictive on business and industry."

Rock notes that New Hampshire Governor Maggie Hassan recently joined governors from eight other Northeast and Mid-Atlantic states in petitioning the federal EPA to require upwind states to reduce air pollution generated within their borders and that is carried by prevailing winds and contributes to the formation of ozone in downwind states.

For more information on the Forest Watch program, visit http://www.forestwatch.sr.unh.edu.

The University of New Hampshire, founded in 1866, is a world-class public research university with the feel of a New England liberal arts college. A land, sea, and space-grant university, UNH is the state's flagship public institution, enrolling 12,300 undergraduate and 2,200 graduate students.

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